

Heart Diseases

Pericardial

	Pericarditis	Pericardial effusion	Constrictive pericarditis
Causes	<ul style="list-style-type: none"> - Rheumatic fever - Pneumonia - Tuberculosis - Viral infections - MI - Uraemia 	Acute pericarditis	<ul style="list-style-type: none"> - Tuberculosis - Pleurisy
Symptoms	<ul style="list-style-type: none"> - No special complain - Or pain 	<ul style="list-style-type: none"> - Asymptomatic - Or severe dyspnea 	Slight dyspnea
signs	Friction rub	<ul style="list-style-type: none"> - Decrease blood pressure - Peripheral cyanosis - Sweating - Signs of right heart failure - Weak cardiac impulse - Faintness of heart sounds - Soft S1, S2 - Dull early diastolic added sounds - Pulsusparadoxus - Persistence pericardial friction - ↑ dullness on percussion 	<p>In pt. with no valve disease or other causes of cardiac failure:</p> <ul style="list-style-type: none"> - Increase venous pressure - Liver enlargement - Ascites <p>Pulsusparadoxus Heart is not enlarged Jugular engorgement and pulsation</p>

Helpful investigations	ECG: convex ST elevation, T wave inversion over the affected areas	<ul style="list-style-type: none"> - Radiology - Echocardiography - Cardiac catheterization - Paracentesis 	Radiography: may show calcification
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Ischemic heart disease

Stable angina	Unstable angina
Predictable	Not Predictable, sudden
Fixed stenosis	Dynamic stenosis
Demand lead angina	Supply lead angina
Pain: on effort, lasts less than 20 min.	Pain: at rest, continuous, lasts >20 min.
Relieve by rest and sublingual tabs	Sublingual tabs may decrease but not relieve it

Myocardial

	Myocardial ischemia or infarction	Acute cardiomyopathy	Myocarditis
Causes	Predisposing factors: -fixed age, sex, family history -modifiable: hypertension, diabetes, smoking, central obesity, stress, alcohol, lack of exercise	<ul style="list-style-type: none"> - Rheumatic fever - Viral or bacterial infections 	Infections: bacterial, viral, protozoa Non infective: idiopathic, autoimmune (rheumatic fever), scleroderma, toxic
Signs	<ul style="list-style-type: none"> - Frank's sign, xanthomata, xanthelasma - Thready pulse - Collapse, pallor - Sweating - Faintness - Feeble pulse - Falling blood pressure - Vomiting - Conduction or rhythm disorders - Friction rub - Pyrexia, leucocytosis - ↑sedimentation rate and serum cardiac enzymes level After week or two: <ul style="list-style-type: none"> - Infarction reach endocardium - Mural thrombus - Systemic embolism - Cardiac failure, esp. left - Papillary muscle rupture - Aneurysm of weak areas 	<ul style="list-style-type: none"> - Precordial oppression - Rapid feeble pulse - Fall in blood pressure - Cardiac dilatation - Bradycardia - Signs of heart failure Dilated: diffuse apex beat Hypertrophic obstructive: jerky pulse	

Symptoms	Angina pain, sever, slight or absent and lasts for hours.		Chest pain Tachycardia Fever Friction rub
Types		1) Dilated cardiomyopathy 2) Hypertrophic obstructive cardiomyopathy 3) Restrictive cardiomyopathy	

Acute coronary syndrome

	ST MI	Non ST MI	Unstable angina
On ECG	ST elevation	T inversion ST depression	Normal During attack: may show flat or inverted T wave, ST depression
Serum cardiac enzymes	elevated	elevated	absent

Valvular

	Mitral stenosis	Mitral incompetence	Aortic incompetence	Aortic stenosis	Tricuspid incompetence	Infective endocarditis
Causes	Rheumatic	Rheumatic Ischemic (ruptured papillary muscles) Congenital (floppy valve) Bacterial	Rheumatic Syphilitic Bacterial	Rheumatic Atherosclerotic Congenital	Rt. Ventricular failure Mitral or pulmonary disease	Congenital Acquired cardiac lesions
Symptoms	Dyspnea on effort, paroxysmal, cheyne-stokes breathing			Angina at rest	Angina at rest Cardiac syncope Dizziness	

Signs	<p>Cyanosis</p> <p>Tapping apex beat</p> <p>Pulse: Atrial fibrillation, thready</p> <p>Rt. Ventricle enlargement</p> <p>Diastolic thrill at apex</p> <p>Palpable S1</p>	<p>Pulse: may be</p> <p>Atrial fibrillation</p> <p>Enlargement of left ventricle</p> <p>Sever: Lt. parasternal pulsation</p> <p>Diffuse apex beat</p> <p>Systolic thrill at apex</p>	<p>Pulse: collapsing, visible capillary, undue arterial pulsation, bisferiens</p> <p>Heart enlargement</p> <p>Corrign's sign</p> <p>Systolic+ diastolic murmur in femoral</p> <p>Diffuse apex beat</p>	<p>Pulsus plateau, anacrotic pulse, bisferiens+ audible, palpable</p> <p>S4</p> <p>Lt. ventricular hypertrophy</p> <p>Harsh systolic murmur in carotid</p> <p>Systolic thrill at base</p>	<p>Pulse: may be</p> <p>Atrial fibrillation</p>	<p>Of septicaemia:</p> <ul style="list-style-type: none"> -Spleen enlargement -Pyrexia -Anaemia -Embolic manifestation Clubbing finger Splinter haemorrhage Osler's nodes
Heart sounds + murmurs	<p>Mitral diastolic murmur+ loud S1 and opening snap</p> <p>Accentuated pulmonary S2</p>	<p>Pansystolic murmur+ soft S1+ may be S3</p>	<p>Early diastolic (Austin flint) murmur+ S3</p>	<p>Mid-systolic murmur+ S4</p>	<p>Diastolic murmur+ rt. Ventricular S3</p>	
investigations	<p>Radiography</p> <p>ECG (bifid P wave)</p>		<p>Radiology</p> <p>ECG</p> <p>Phonocardiography</p> <p>Echocardiography</p>	<p>Radiology, catheter studies</p> <p>Echocardiography</p>		<p>Blood culture</p>

Congenital Heart Diseases

Atrial septal defect (ASD)	Ventricular septal defect (VSD)	Patent ductus arteriosus	Pulmonary stenosis	Coarctation of the aorta
acyanotic congenital heart defect	acyanotic congenital heart defect	acyanotic congenital heart defect	Cyanotic congenital heart defect	Cyanotic congenital heart defect
Asymptomatic until middle age	Symptomless			Commonly associated with Marfan's syndrome
Ejection systolic murmur & Ejection sound	Loud pansystolic murmur with thrill	Continuous murmur	Mid-systolic murmur with thrill	Late systolic murmur
Mid-diastolic murmur	Diastolic murmur at apex			
Prolonged Rt. Ventricular systole				Absent /delayed femoral pulses
Rt. Bundle branch block				Palpable collateral vessels around shoulder girdle
Wide fixed splitting of S2		Wide pulse pressure		
Right ventricular hypertrophy	Left ventricular hypertrophy	Left ventricular hypertrophy	Right ventricular hypertrophy	
Enlarged & pulsatile pulmonary artery with its branches	Enlarged pulmonary artery with its branches (rarely)	Enlarged & pulsatile pulmonary artery with its branches		Rib-notching is diagnostic radiographically

Heart Failure

	Right heart failure		Left heart failure	
Classification	Right Atrium Failure (RAF)	Right Ventricular Failure (RVF)	Left Atrium Failure (LAF)	Left Ventricular Failure (LVF)
Common causes	Tricuspid Stenosis (TS)	Mitral Stenosis (MS)	Mitral Stenosis (MS)	Aortic Stenosis (AS)
	Atrial Myxoma	Pulmonary Hypertension (PHT)	Atrial Myxoma	Myocarditis
		Massive pulmonary emboli		
		Tricuspid Regurgitation (TR)		Mitral Regurgitation (MR)
		Pulmonary Regurgitation (PR)		Aortic Regurgitation (AR)
	Atrial septal defect (ASD)	Ventricular septal defect (VSD)		Ventricular septal defect (VSD)
		Myocardial Diseases: 1) IHD 2) CMP		Myocardial Diseases: 1) Dilated CMP 2) MI
		Respiratory diseases: 1) Chronic bronchitis 2) Pulmonary fibrosis		
	Failure is gradual		Failure is sudden	

<p><i>Symptoms and Signs</i></p>	<p>Sudden onset of Engorged external veins (esp. Jugular) Oedema:</p> <ol style="list-style-type: none"> 1. Ascitis 2. Anasarca (peripheral edema) 3. Sacral oedema <p>Enlarged & tender liver Renal impairment:</p> <ol style="list-style-type: none"> 1. Oliguria 2. Concentrated urine <p>Atrial fibrillation (Precipitating factor) Positive abdominojugular reflux</p>	<p>Signs of Acute Pulmonary oedema:</p> <ol style="list-style-type: none"> 1. Cough 2. Labored breathing 3. Crepitation at the base 4. Asphyxiation 5. Copious frothy sputum pinky with blood staining 6. Cyanosis (late sign) <p>Paroxysmal dyspnea Retrosternal discomfort Faintness Gallop rhythm Ventricular fibrillation</p>
<p><i>Hemodynamic compensation in heart failure in order:</i></p>	<ol style="list-style-type: none"> 1st. Increased heart rate (tachycardia) 2nd. Heart dilatation 3rd. Increased muscle mass (Hypertrophy) 4th. Renin-Angiotensin-Aldosterone overstimulation 5th. Redistribution: The body prioritizes which organs get the available blood delivered, mostly the brain, and which don't. 	

Stenosis ➡ Pressure overload

Regurgitation ➡ Volume overload

Ectopic beats	Atrial fibrillation (AF)	Atrial flutter	Paroxysmal tachycardia	Simple tachycardia	Bradycardia
Atrial or ventricular	Atria cease to beat	Comparable with AF	Rapid beating	Rapid beating	Slow heart rate
Small premature beats	Minute rapid contractions (400-600/min)	Great rate (200-400/min) with (2:1, 3:1, 4:1) AV block.	High rate (150-200/min) but it is 1:1 conduction.	As high as found in Atrial flutter or paroxysmal tachycardia	Less than 60 beats/min
Followed by long pause then bigger beats			Pulsus alternans	Less than 140 beats/min when Pt. is at rest	Occur physiologically (athletes or old age)
Not present all the time		Persistent (days to weeks)	Shorter than flutter (minutes to hours)	Produced by emotion, exercise, fever or toxæmia (thyrotoxicosis)	May be temporarily in non-cardiac conditions: <ol style="list-style-type: none"> 1. after-effects of febrile illnesses (influenza & pneumonia) 2. Jundice 3. increased intracranial pressure (e.g. cerebral tumour) 4. Hypothyroidism.

May imitate Atrial flutter (if numerous)	Ventricular rate is higher than pulse rate (pulse deficit)	Sudden doubling or halving of the ventricular rate	May be mistaken for Atrial flutter		Occurs in Heart block (partial & total)
Disappear with exercise	Induced by exercise	Reduced temporarily by pressuring over the carotid sinus	Stopped by change in posture or pressuring over the carotid sinus		In partial heart block, the rate suddenly increases by exercise
Significant if associated with MI	Associated with MS, IHD and Thyrotoxicosis	Sudden onset and offset of palpitation	Sudden onset and offset of palpitation		Prolonged P-R intervals
Large QRS complexes with S waves opposing Q waves.	Complete irregular QRST complexes	Cannon waves (if interspersed with "a" waves)			Periods of ventricular standstill (e.g. Stokes-Adams attacks)
Inverted P waves	Absent P waves	Inverted & abnormal P waves (Saw-tooth pattern)			In complete heart block, there is AV dissociation & cannon waves.
		syncope	polyuria		Syncope resolves in less than a minute (Pt. is white then cyanosed then flushed)